

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended): A process for manufacturing a polyurethane including comprising the steps of:

a) mixing a difunctional alcohol with a difunctional isocyanate to form a first mixture in the presence of not more than 30 weight percent based on overall solid content, of a water-miscible solvent having no reactive hydrogen, wherein the difunctional isocyanate is selected from the group consisting of aliphatic diisocyanates, alicyclic diisocyanates, diphenylmethane-4,4'-diisocyanate, toluene diisocyanate and their mixtures thereof;

b) heating the first mixture;

c) adding a chain extender to the heated first mixture to form a second mixture, said chain extender containing reactive hydrogen groups; and

d) neutralizing the second mixture by a neutralizer to form the polyurethane;

e) dispersing the polyurethane in water; and

f) removing the water-miscible solvent.

2. (Original): The process of claim 1, wherein the first mixture is heated at a temperature of about 80 degree Celsius to about 100 degree Celsius in step b).

3. (Previously Presented): The process of Claim 2, wherein the first mixture is heated for about two to about five hours.

4. (Canceled)

5. (Currently amended): The process of Claim [[4]] 1, wherein said ~~aliphatic diisocyanates~~ diisocyanate is selected from the group consisting of isophorone diisocyanate, 4,4-dicyclohexylmethane diisocyanate, and 1,6-hexamethylene diisocyanate and ~~tetramethylxyllylene diisocyanate~~.

6. (Canceled)

7. (Original): The process of Claim 1, wherein the difunctional alcohol is selected from the group consisting of polyether diol, polyester diol, polycarbonate, polycaprolactone, and their mixture thereof.

8. (Currently Amended): The process of Claim 7, wherein the difunctional alcohol is selected from the group consisting of polypropylene glycol, 1,4-butane glycol adipate, polytetramethylene glycol, polyethylene glycol, ~~bisphenol A+propylene oxide~~, and their mixture thereof.

9. (Currently Amended): The process of Claim 1, wherein said chain extender is selected from the group consisting of 1,4-butanediol, 1,3-propanediol, 1,2-ethanediol, 4,4'-dihydroxy biphenyl, 2,2-dimethylolpropanic acid, and their mixture thereof.

10. (Original): The process of Claim 1, wherein the molar ratio between the difunctional isocyanate and the difunctional alcohol is from about 1:1.5 to about 1:5.0.

11. (Original): The process of Claim 1, wherein the neutralizer is selected from the group consisting of water-soluble tertiary amines, alkali metal hydrides, and their mixtures thereof.

12. (Previously Presented): The process of Claim 11, wherein and the molar ratio of the reactive hydrogen groups to the neutralizer is from about 1:0.5 to about 1:1.2

13. (Original): The process of Claim 1 being performed without using a solvent.

Claims 14 and 15 (Canceled)

16. (Currently Amended): The process as claimed in claim [[15]] 1, wherein the amount of water is about 5% to about 50 weight percent with respect to the overall solid content.

17. (Currently Amended): The process as claimed in claim [[15]] 1, wherein the temperature of the water is about 5 degree Celsius to about 80 degree Celsius.

18. (Previously Presented): Polyurethane manufactured by the process of Claim 1.

19. (Original): Polyurethane of Claim 18 having a tensile modulus varying with temperature, and a glass transition or melting temperature, wherein the ratio of the tensile modulus at temperatures 10°C higher than the glass transition or melting temperature, to the tensile modulus at temperatures 10°C lower than the glass transition or melting temperature, is about 50 to 400.

20. (Original): Polyurethane of Claim 19, wherein the glass transition or melting temperature is in the range of about -30°C to about 80°C.

21. (Original): Polyurethane having a tensile modulus varying with temperature, and a glass transition or melting temperature, wherein the ratio of the tensile modulus at temperatures 10°C higher than the glass transition or melting temperature, to the tensile modulus at temperatures 10°C lower than the glass transition or melting temperature, is about 50 to 400.

22. (Original): Polyurethane of Claim 21, wherein the glass transition or melting temperature is in the range of about –30°C to about 80°C.